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**Notes:**

1. Untranslatable words are replaced with asterisks (\*\*\*).
2. Texts in the figures are not translated and shown as it is.

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**FULL CONTENTS**

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**[Claim(s)]**

**[Claim 1]**A storage cartridge comprising:

A storage which can record or reproduce information.

A displaying means which is provided with a cartridge case which stores this storage, and displays display information from an external device on this cartridge case.

A display information transmission means which is connected to the aforementioned external device and transmits said display information to said displaying means.

**[Claim 2]**A storage cartridge, wherein a displaying means is provided with a display information storage means which memorizes display information in the storage cartridge according to claim 1.

**[Claim 3]**A storage cartridge, wherein a displaying means is provided with a liquid crystal display in the storage cartridge according to claim 1 or 2.

**[Claim 4]**A storage cartridge characterized by a display information transmission means being a connector in the storage cartridge according to claim 1, 2, or 3.

**[Claim 5]**A storage cartridge, wherein contents displayed by a displaying means in the storage cartridge according to claim 1, 2, 3, or 4 are the remaining capacity which can memorize a storage.

**[Claim 6]**A storage cartridge being the remaining time in which record when contents displayed by a displaying means convert into a picture remaining capacity which can memorize a storage in a storage cartridge of any one description in Claims 1-4 is possible.

**[Claim 7]**A storage cartridge, wherein contents displayed by a displaying means in a storage cartridge of any one description in Claims 1-4 are character messages.

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the storage cartridge which stored the storage which records or reproduces information to the cartridge case.

[0002]

[Description of the Prior Art] By protecting a storage with a cartridge case, the conventional storage cartridge is built so that conveniently [ loading in a cellular phone or an external device (recording and reproducing device) ]. Distinction, the direction of loading, a brand name, an application standard name, other messages, a pattern, etc. of the back and front are displayed on the cartridge case. A user and the sales manufacturer wrote the character and the pattern in the sheet, and this kind of storage cartridge used printing or surface concavo-convex shape for the method of attaching it to a cartridge case, and the case itself, and showed the information on a cartridge.

[0003]

[Problem to be solved by the invention] However, in the above-mentioned conventional storage cartridge, it had a means automatic, to have updated and to display for neither the remaining capacity which can memorize a storage, nor the name of the storage itself currently recorded as information in the storage (a user can name), a message, etc. Therefore, when the storage must be reproduced and seen and there are many storage cartridges, it is troublesome to check them one by one and it takes time to know the remaining capacity of a storage. For example, in a conventional storage cartridge like a floppy disk, if it set to the drive which can play the storage and did not play, a filename, a disk name, the contents, etc. which were recorded on memorizable remaining capacity or a storage were not able to be known. This is being able to say all cartridge-ized storages, such as videotape, an audiotape, and a magneto-optical disc. When actually using it, after judging remaining capacity and the contents based on the label of the handwriting it is not necessarily the newest information, it set in the external device, but handwritten label information always cannot necessarily be trusted and it might get it confused which to be which cartridge depending on the case.

[0004] There is a place which it was made in order that this invention might solve the above-mentioned conventional problem, and is made into the purpose in providing the storage cartridge which can display the information currently recorded on the storage, memorizable remaining capacity, etc.

[0005]

[Means for solving problem] The storage with which this invention can record or reproduce information since the above-mentioned purpose is attained, It had the cartridge case which stores this storage, and the displaying means which displays the display information from an external device on this cartridge case, and the display information transmission means which

is connected to the aforementioned external device and transmits said display information to said displaying means were established. This invention was provided with the display information storage means a displaying means remembers display information to be. As for this invention, the displaying means is provided with the liquid crystal display.

[0006] This invention is characterized by a display information transmission means being a connector. This invention is characterized by the contents displayed by a displaying means being the remaining capacity which can memorize a storage. This invention is characterized by being the remaining time in which record when the contents displayed by a displaying means convert into a picture the remaining capacity which can memorize a storage is possible. This invention is characterized by the contents displayed by a displaying means being character messages.

[0007] According to this invention, the remaining time in which memory when a displaying means converts into a picture remaining capacity which can memorize a storage, and memorizable remaining capacity is possible, a display message, etc. are displayed. This connector is connected to an external device and a display means of communication makes display information from an external device input into a displaying means by a connector.

[0008]

[Mode for carrying out the invention] Hereafter, an embodiment of the invention is described with reference to Drawings etc. A perspective view and drawing 2 in which 1 embodiment of a storage cartridge which requires drawing 1 for this invention is shown are a block diagram of the cartridge. The storage cartridge 1 is provided with the cartridge case 3 and the displaying means 4 which store the storage 2 of the shape of a disk which can record or reproduce information, and this storage 2 in these figures. In this embodiment, although a magneto-optical disc is shown as the storage 2, according to a use, a removable magnetic disk or CD (compact disc) may be sufficient also as magnetic tape.

[0009] The cartridge case 3 is formed in the thin box type of the size which can store the storage 2 by a synthetic resin, and the hub hole 5 is formed in the center of the surface, and the display device 7 of the opening 6 and said displaying means 4 is formed across the hub hole 5. The connector 9 as the display switch 8 turns on the displaying means 4 and switch off, and a display information transmission means is formed in the 1 side of the display device 7. It is usually blockaded by the shutter 10, and said opening 6 will be wide opened, if the external device which performs record and reproduction is equipped with the storage cartridge 1. Said connector 9 is connected to the connector by the side of the aforementioned external device at this time.

[0010] Said displaying means 4 was provided with the memory 12 and the power supply 13 as said display device 7, the display controller 11, and a display information storage means as shown in drawing 2, and it has been independent in said storage 2. Therefore, if the shape of

the cartridge case 3 is changed, the storage 2 can respond also a magneto-optical disc, CD, or magnetic tape.

[0011] Said display device 7 consisted of liquid crystal displays, and the indicator has exposed it on the surface of the cartridge case 3. As the display device 7, although the liquid crystal display was shown as an example, it may not be liquid crystal display or a light emitting diode (LED), an electrochromic screen, or a plasma display may be sufficient. In the case of a LED screen, even place [ dark ], a display screen can be checked, and on an electrochromic screen, when not changing the contents of a display screen frequently, there is an advantage that there is little power consumption.

[0012] Said display controller 11 is connected with said display switch 8 at the connector 9. The display information the display controller 11 is remembered to be by the memory 12 if the display switch 8 is turned ON, For example, the remaining time etc. in which record when the name of storage 2 the very thing, a message, memorizable remaining capacity, and this remaining capacity are converted into a picture is possible are made to output, and it is made to display on the liquid table screen of the liquid crystal display 7. Although display information is displayed on a liquid crystal display, [ in this storage cartridge 1 ] [ the fixed time after pushing the display switch 8 ] It is because this setup used the display switch 8 as the push button type, and when light is irradiated with this switch 8 by the solar cell, whenever it shall be turned on, display information will be displayed on a liquid crystal display in a bright place.

[0013] The displaying means 4 acquires, records and displays the display information inputted from the connector 9 if needed. Namely, if the external device which can record or reproduce the storage 2 is equipped with the storage cartridge 1 and the connector 9 is connected to the connector in an external device, While the display information from the external device about the storage 2 of the cartridge 1 concerned is inputted into the display controller 11 via the connector 9 and the controller 11 makes the memory 12 memorize this inputted display information, it is made to display on the liquid crystal display 7. A display is made to turn off automatically after the display controller 11 issues arbitrary time display instructions at this time.

[0014] Although the external device with which it is equipped with such a storage cartridge 1 changes with kinds of storage 2, it has structure which a storage can record or reproduce like a general storage cartridge. A character, a pattern, etc. may be sufficient as the display information inputted from an external device besides the capacity of the storage 2, recorded capacity, recordable capacity, etc. For example, as long as the storage 2 mainly records a picture, the time in which the remaining record of the picture is possible may be displayed, and a user may input and may make it display from an external device by making the outline of the disk into a comment sentence.

[0015] Said power supply 13 supplies electric power to the liquid crystal display 7, and the

display controller 11 and the memory 12. As the power supply 13, although the dry cell is used, they may be a battery charger and a solar cell.

[0016]In the above-mentioned embodiment, although display information was displayed electrically, using the power supply 13 as the displaying means 4, it may be the displaying means which displayed display information by change of physical shape or a position not using the power supply. In the type using a power supply, it has the memory 12 and there is an advantage which even a character and an illustration can express. On the other hand, the type which does not use a power supply can plan the weight saving and cost reduction of the cartridge 1 compared with the case of the former.

[0017]Drawing 3 is a figure showing the example of the displaying means which displays display information by physical change not using a power supply. He is trying for this displaying means to display remaining capacity memorizable by this using the revolving counter 20. It is connected to the screw 21 as a display information transmission means, and if an external device rotates this screw 21, the revolving counter 20 is constituted so that that rotation may be transmitted to a display vehicle. If such a revolving counter 20 is used as a displaying means, even if a power supply is not needed and it takes out the storage cartridge 1 from an external device, displaying display information can be continued.

[0018]Drawing 4 is a figure showing other examples of the displaying means which displays display information by physical change not using a power supply. The board 23 slidable as a displaying means is formed, and he moves this in the arrow A and the direction of B by rotation of the screw 21, and is trying to read display information with the scale 24 with that stop position in this embodiment.

[0019]This invention may not be specified as the above-mentioned embodiment, and various change and modification may be possible for it, for example, it may be except the part shown in drawing 1, drawing 3, and drawing 4 as an allocation position of the liquid crystal display 7, the connector 9, and the screw 21. For example, in the case of a disc medium, the side may be sufficient. Even if the shape of a storage is a form (for example, videotape) where not a disk type but the tape was rolled, the arrangement place can be arranged to either the surface, the back the side or the upper and lower sides.

[0020]

[Effect of the Invention]As explained above, [ the storage cartridge concerning this invention ] The storage which can record or reproduce information, and the displaying means which is provided with the cartridge case which stores this storage, and displays the display information from an external device on this cartridge case, Since the display information transmission means which is connected to the aforementioned external device and transmits said display information to said displaying means was established, Information, including the remaining time in which record when the remaining capacity which can memorize the storage of the

storage, and the remaining capacity which can memorize a storage are converted into a picture with a cartridge simple substance, without equipping an external device with a cartridge is possible, a character message, etc., can be known. A displaying means can read the display information memorized by that of \*\*\*\*\* if needed in the display information storage means which memorizes display information.

### [Brief Description of the Drawings]

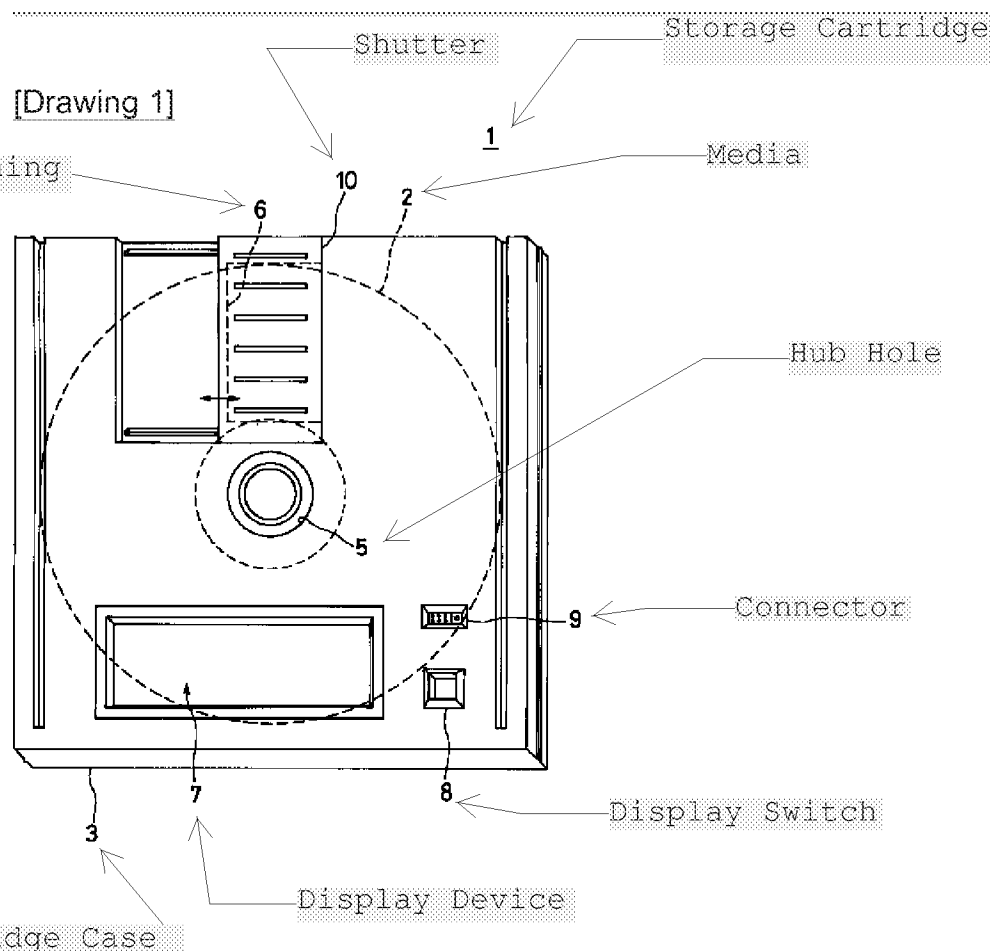
[Drawing 1] It is a perspective view showing the 1 embodiment of the storage cartridge concerning this invention.

[Drawing 2] It is a block diagram of the cartridge.

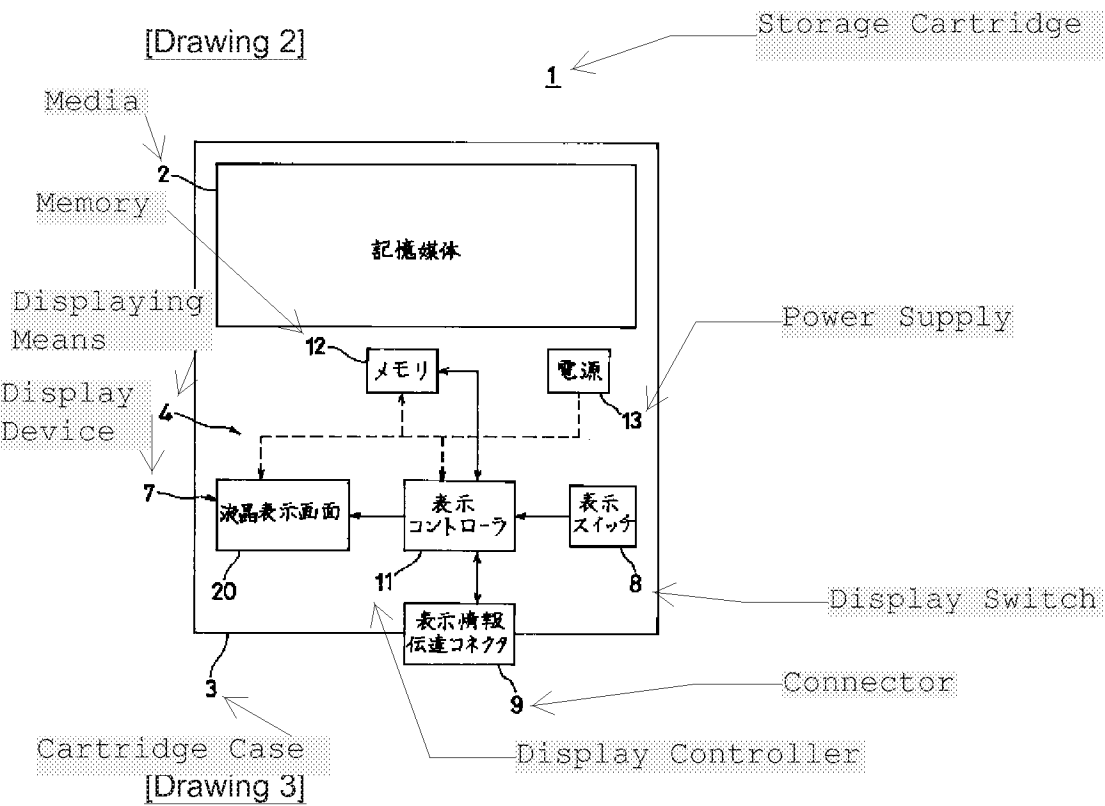
[Drawing 3] It is a perspective view showing other embodiments of this invention.

[Drawing 4] It is a perspective view showing the embodiment of further others of this invention.

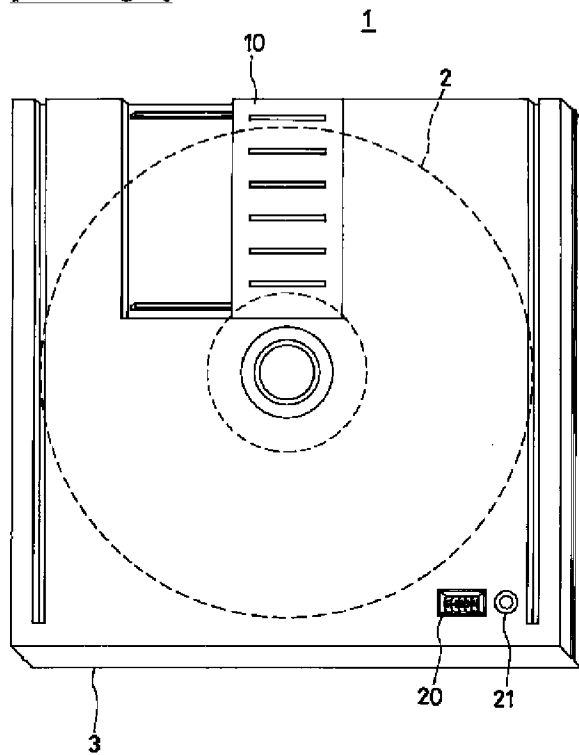
1 -- A displaying means, 6 -- An opening, 7 -- A liquid crystal display, 8 -- A display switch, 9 -- A connector, 10 -- A shutter, 11 -- A display controller, 12 -- A memory, 13 -- A power supply, 20 -- A revolving counter, 21 -- Screw. ] -- A storage cartridge, 2 -- A storage, 3 -- A cartridge case, 4



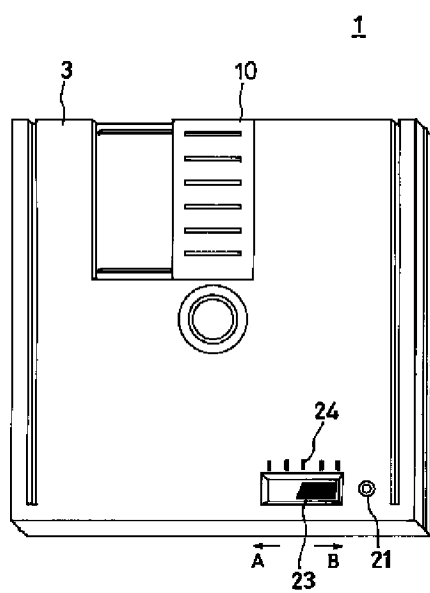
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]